

Invitation for Public Comment on

Dr. Per Peterson, Dr. Najmedin Meshkati, and Dr. Michael Quinn

As Candidates for Appointment to the Diablo Canyon Independent Safety Committee
Term: July 1, 2023 through June 30, 2026

On January 6, 2023, the California Public Utilities Commission (CPUC) announced it was seeking applications from qualified persons to become nominees to fill a vacancy on the Diablo Canyon Independent Safety Committee (Committee) for a three-year term beginning July 1, 2023.

The Committee consists of three members, one each appointed by the Governor, the California Attorney General, and the Chair of the California Energy Commission (CEC). The Committee assesses the safety of the operations of Pacific Gas and Electric Company's Diablo Canyon nuclear power plant and has authority to review quarterly reports and conduct on-site inspections. The Committee reports its observations and recommendations to PG&E annually; the Committee then transmits its report, along with PG&E's response, to the Governor, Legislature, the California Attorney General, the NRC, CEC, and the CPUC.

According to the procedures adopted by the Commission in Decision 07-01-028 and reaffirmed in PG&E Advice Letter 6361-E,¹ and codified by SB 846 in Public Utilities Code § 712.1(c), the President of the CPUC selects no more than three qualified candidates responding to the request for applications, plus the incumbent member whose term is expiring if the incumbent consents to reappointment. The CPUC will issue a resolution ratifying the President's selection of candidates for appointment. The Governor shall appoint the Committee member for the term beginning on July 1, 2023, from the list of candidates selected by the President of the CPUC and ratified by the Commission.

Applications were received from Dr. Najmedin Meshkati and Dr. Michael Quinn in response to the CPUC's January 6, 2023, announcement. The incumbent member whose term is expiring, Dr. Per Peterson, informed the CPUC's Energy Division that he consents to reappointment for a new three-year term beginning July 1, 2023. Their qualifications are summarized below.

The CPUC welcomes public comments on the qualifications of Dr. Meshkati, Dr. Peterson, and Dr. Quinn. Please e-mail comments to david.zizmor@cpuc.ca.gov. We are not accepting comments via U.S. mail this year due the pandemic and work-from-home policies in place at the CPUC.

Comments must be received via e-mail by March 20, 2023.

¹ PG&E Advice Letter 6361-E approving the second restatement of the DCISC Charter as authorized in D.21-09-003 is available at https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC_6361-E.pdf.

Dr. Per Peterson (Incumbent)

Per F. Peterson is a Distinguished Professor in the Department of Nuclear Engineering at the University of California, Berkeley, where he holds the William and Jean McCallum Floyd Endowed Chair. Since 2017 he has also served part time as Chief Nuclear Officer of Kairos Power, a company developing advanced reactor technology resulting from earlier research at UC Berkeley. He is a member of the National Academy of Engineering and a Fellow of the American Nuclear Society.

Peterson grew up in Reno, Nevada, graduating from UNR with a degree in mechanical engineering in 1982. From 1982 to 1985 he worked at Bechtel on high-level nuclear waste processing, contributing to the design of the Defense Waste Processing facility which today is converting defense high level wastes into vitrified glass at the Savannah River Site. He then spent three years to complete masters and doctoral degrees in mechanical engineering at UC Berkeley, where he studied passive heat transfer processes. After completing a postdoctoral fellowship at the Tokyo Institute of Technology working on topics in heat and mass transfer, he joined the Department of Nuclear Engineering at UC Berkeley in 1990. There he served as a National Science Foundation Presidential Young Investigator from 1990 to 1995; as chair of the Energy and Resources Group, an interdisciplinary graduate group, from 1998 to 2000; and as chair of Nuclear Engineering from 2000 to 2005 and from 2009 to 2012. He subsequently served as Executive Associate Dean of the College of Engineering at UC Berkeley from 2015 to 2017 where he led college efforts in undergraduate education and in faculty promotion and tenure reviews.

Peterson's research and teaching at UC Berkeley have focused on high-temperature fusion and fission energy systems, as well as topics related to the safety and security of nuclear materials and waste management. He has served on or chaired advisory committees at Oak Ridge, Idaho, Los Alamos, Lawrence Livermore, and Pacific Northwest National Laboratories, as well as on National Research Council panels studying nuclear waste management and nuclear energy research. He participated in the development of the Generation IV Roadmap in 2002 as a member of the Evaluation Methodology Group and co-chaired its Proliferation Resistance and Physical Protection Working Group until 2017. He has published over 150 archival journal articles and over 190 referred conference proceeding papers, and holds multiple patents related to advanced reactors. His research in the 1990's contributed to the passive safety systems in the GE ESBWR and Westinghouse AP-1000 reactor designs. His 2003 Nuclear Technology article with Charles Forsberg and Paul Pickard identified salt cooled, solid fuel reactors as a promising technology, today called fluoride salt cooled, high temperature reactors (FHRs).

At Berkeley, Peterson has taught extensively in courses related to nuclear reactor design and safety. This includes the undergraduate courses NE-161: Nuclear Power Engineering and NE-170: Nuclear Design, as well as the graduate courses NE-260: Thermal Aspects of Nuclear Reactors, NE-267: Nuclear Reactor Safety, and NE-275: Risk Assessment.

Collectively these undergraduate and graduate courses cover all theoretical and practical aspects of nuclear reactor safety.

Peterson's research and publications cover both applied and fundamental topics related to nuclear technology. This work and some 340 research publications have covered topics in nuclear fusion energy, fission reactor design and safety analysis, nuclear waste management, and fundamental topics in heat transfer and fluid mechanics that are relevant to these applications. He is frequently called upon to speak about these topics, and to serve on advisory panels for the federal government, the national laboratories and the national academies on topics related to nuclear technologies, as well as expert panels at academic conferences and workshops.

From 2010 to 2012, Peterson served as a member of President Obama's Blue-Ribbon Commission (BRC) on America's Nuclear Future, where he co-chaired its Reactor and Fuel Cycle Technology subcommittee with retired Senator Pete Domenici. The BRC provided recommendations to the Administration, Congress, and the DOE on strategies to manage U.S. spent fuel and high-level wastes. These recommendations have clear relevance to California, including defining the national approach to manage used fuel left at decommissioned reactor sites that include Rancho Seco, Humboldt Bay, and San Onofre in California.

Peterson was elected to the National Academy of Engineering in 2020. He is also a Fellow of the American Nuclear Society and a former chair of its Thermal Hydraulics Division. He previously chaired the Radiation Safety Committee for UC Berkeley, which is regulated by the California Department of Public Health and is responsible for reviewing all authorizations for radioactive materials and radiation producing machines used in research on the UC Berkeley campus. He chaired the Reactor Safeguards Committee for the Aerotest Research Reactor in Pleasanton, California from 2001 to 2017. He was appointed in 2021 as a member of the National Academy's Nuclear and Radiation Studies Board. In 2004, he was appointed to the Diablo Canyon Independent Safety Committee by the Attorney General and served until 2007; he was appointed to the Committee again in 2008 by the Governor and most recently was reappointed to the DCISC in 2021.

Dr. Michael Quinn

Michael Quinn has invested 40-plus years into the public health and safety of the nuclear power industry, entailing 25 years in the operations power block at a nuclear power station, and during the past 23 years as an executive operations assessor and consultant to the commercial nuclear industry in the U.S. and Canada.

Dr. Quinn's expertise entails but is not limited to nuclear safety; nuclear operations; significant operational event assessments; nuclear program inspection and performance evaluation; technical program rigor; high reliability and corrective action program/human performance/safety culture program implementation.

Throughout his career, Michael has brought the tenets of Compliance, Integrity, Transparency, and Competency to nuclear power facilities and high-reliability organizations with whom he has been engaged.

What Dr. Quinn can bring to the DCISC:

- Current and comprehensive nuclear safety and operations assessment and Evaluation experience in over 30 nuclear facilities since 2000
- Prior to 2000, 25 years of in-house, nuclear operations licensee experience at two nuclear power stations through all operational modes, including 13 Refueling and Maintenance Outages
- Experience as a Senior Reactor Operator Licensed Director and Duty Officer (US NRC License No. 10071); SRO licensed for 15 years

Current Nuclear Operations Experience: Nuclear Licensees, Nuclear Regulators, and Nuclear Suppliers

Consistent with the activities the DCISC provides in its independent assessment of Diablo Canyon operations, Dr. Quinn has provided the same, plus additional assessment service initiatives to over 25 nuclear facilities/units and for three regulators in the United States and Canada since 2000. An overview:

- Currently a Lead on the Recovery Team at the NIST Center for Neutron Research (NCNR) in Gaithersburg MD; there was a significant reactor event in 2021 that resulted in nuclear fuel damage; the reactor remains shutdown and is presently in Column 4 of US NRC IP 95003.
- Recently led a Team that assessed a series of significant events, Conduct of Operations, and Safety Culture, at the trans-uranic waste repository Waste Isolation Pilot Plant (WIPP) outside Carlsbad NM
- Provided requested assessment to 'unplanned' nuclear events at 17 nuclear power units in the United States and Canada
- Conducted Operational Reliability assessments impacting 18 nuclear facilities
- Conducted Technical Engineering and Operational Rigor assessments including 15 nuclear safety-related units/facilities (e.g., a large Department of Energy

- engineering remediation project for management of 50MM gallons of nuclear mixed waste; and an Independent Spent Fuel Storage Installation [ISFSI])
- Taught Operational and Event Causal Analysis (a 24-hour course) over 45 times to the US Nuclear Regulatory Commission, entailing hundreds of Inspectors and technical staff; contracted into 2023
(in this course teaches NRC staff how to evaluate nuclear station event analysis reports and their associated corrective action implementation effectiveness)
- Taught Operational and Event Causal Analysis (a 24-hour course) to the Japan Nuclear Regulation Authority (JNRA) staff as well as to the Canada Nuclear Safety Commission (CNSC) staff
- Dr. Quinn is the only individual who has taught nuclear safety event causal analysis evaluation to the US Nuclear Regulatory Commission, the Japan Nuclear Regulation Authority, and the Canadian Nuclear Safety Commission.

Over the past 23 years Dr. Quinn has been engaged by nuclear organizations in the safe operation of nuclear units, as well as in the operational, new build, refurbishment, decommissioning and spent nuclear fuel storage installation sectors of the nuclear industry in the U.S. and Canada. On the regulatory side, during the 2006-2023 period he has trained U.S. NRC resident inspectors and regional office technical staff on methods to evaluating significant nuclear licensee operational events and processes, with a focus on nuclear safety and the three cross-cutting areas of *Human Performance, Problem Identification and Resolution (PI&R), and Safety Culture*.

During the past 20-plus years, Dr. Quinn continues to evaluate and to remediate licensee and supplier organizational and corrective action programs; providing PI&R, Human Performance, and Safety Culture consulting, coaching, assessment, and training. He provides related consulting services to several nuclear industry sectors, including: the commercial nuclear power industry in the U.S. and Canada; U.S. Government (e.g., U.S. NRC, U.S. Department of Energy); nuclear supplier organizations - large nuclear steam supply system providers (e.g., Westinghouse and Mitsubishi); as well as smaller nuclear suppliers to the industry.

From a major nuclear industry ‘campaign’ perspective, Dr. Quinn has been/is engaged in many industry issue campaigns and challenges that include/have included:

- Nuclear fuel handling, storage, cask operations
- Safety culture challenges to nuclear operations
- Safeguards at operating and decommissioning nuclear units
- Technical program rigor and quality challenges resulting in non-compliances
- Independent Spent Fuel Storage Installations (ISFSI) operations and events
- Radioactive effluents and radioactive waste treatment; Groundwater tritium
- Radiological/ trans-uranic worker uptake events
- Corrective action program and 10CFR50 Appendix B Criteria challenges
- Post-accident response and subsequent upgrades (NUREG 0737)
- Containment sump screen upgrade (GSI-191)
- And very importantly, the impact that a potential ‘final shutdown decision’ (as Diablo Canyon was facing in 2024-2025) has on nuclear station staffs’

performance while attempting to maintain focus on operational excellence. Experience includes maintaining operations ‘within the envelope,’ key staff retention, addressing increases in event frequency and severity, increased employee concerns, and safety culture/ safety conscious work environment (SCWE) declines, amongst others.

Nuclear Operations Experience within the Power Block 1975-1999

While in the operations power block of a pressurized water reactor (PWR) unit with a large nuclear utility from 1975 to 1999, Michael earned a U.S. NRC Senior Reactor Operator License on a Westinghouse (PWR) unit, and held leadership positions that included Director of Nuclear Station Services; Nuclear Station Duty Officer; Chair-Nuclear Plant Operations Review Committee [operations oversight including 50.59 Reviews]; Corrective Action Review Board (CARB) Chair; Director of Nuclear Station Emergency Operations (DSEO); Refueling and Maintenance Outage Shift Manager; Manager of Chemistry and Radiochemistry; and Project Manager, reporting to the President, on a three-unit, four-year Nuclear Station Recovery Team.

During this time frame Michael was a member of the senior station leadership team at Haddam Neck Station, a nuclear unit that consistently performed at U.S. NRC SALP-1 and INPO-1 performance levels (presently termed U.S. NRC ROP Column 1 and INPO-1 respectively).

LICENSES/ CERTIFICATIONS CONTRIBUTORY TO A POTENTIAL POSITION ON THE DCISC:

- U.S. NRC Senior Reactor Operator License #10071 on a Westinghouse PWR (Diablo Canyon is a Westinghouse PWR NSSS design)
- Certified Root Cause Investigator (Nuclear Safety Review Concepts Event Evaluation and PII)
- Certified Root Cause Training Instructor
- Certified Radiation Safety Officer

Michael earned a Doctorate in Organizational Management Systems (organizational system dynamics), and preceding that effort he had completed an Executive Master of Business Administration degree and had earned a Bachelor of Science degree in Chemistry.

Michael’s collective current and past nuclear power experience is congruent with the Diablo Canyon Independent Safety Committee’s (DCISC) mission and requirements. He can bring current and comprehensive assessment experience in nuclear operations, decommissioning, and *Independent Spent Fuel Storage Installation (ISFSI)* management to supplement the depth and breadth of the DCISC team.

Dr. Quinn has a demonstrated history of articulating his evaluations in an objective, empirically-based, and plain language manner to a spectrum of stakeholders (e.g., utility

commissions, the public, station staff, utility staff, state and federal regulators, interest groups, and the boardroom).

In summary, Michael offers current and comprehensive nuclear industry assessment and evaluation experience that support consideration of his candidacy for a role on the Diablo Canyon Independent Safety Committee.

On a personal note:

- From 2002-2011 and 2012-2021, Dr. Quinn served on the Connecticut Community Care Inc. (CCC) Board of Directors, a non-profit health care service provider of 250 employees who are responsible for over 9,000 medically compromised individuals in need.

Michael, after serving as Chair of the Board, rotated off the Board per the CCC Charter requirement to serve no more than three consecutive three-year terms.

- During his tenure as Chair of the Board, Dr. Quinn helped guide the CCC organization, and the Board, through 2020-2021 with a focused and effective response to the Coronavirus impact on the organization's 9000 clients in Connecticut.
- Michael is a four-decade American Red Cross blood donor.

LinkedIn: <https://www.linkedin.com/in/quinnmd/>

Dr. Najmedin Meshkati

The following is a synopsis of University of Southern California (USC) Professor Najmedin Meshkati's qualifications, experience, and publications in the field of nuclear safety. For the past 38 years, he has been teaching and conducting research on safety, risk reduction and reliability enhancement of complex technological systems, including nuclear power plants.

Dr. Meshkati has no association with Diablo Canyon proceedings, no conflict of interest, and has no investment or income, whatsoever from entities listed on page 4 of the *Diablo Canyon Independent Safety Committee Application for Nomination*.

A Short Biography

Dr. Najmedin Meshkati is a (tenured, full) Professor of Civil/Environmental Engineering, Industrial & Systems Engineering; and International Relations at the University of Southern California (USC); an Associate (ex-Research Fellow) with the Project on Managing the Atom at Belfer Center for Science and International Affairs at Harvard Kennedy School; and has been an Associate with the Mossavar-Rahmani Center for Business and Government at Harvard (2018-2020).

Meshkati was a Jefferson Science Fellow and a Senior Science and Engineering Advisor, Office of Science and Technology Adviser to the Secretary of State, US State Department, Washington, DC (2009-2010). He is a Commissioner of The Joint Commission (a not-for-profit organization that accredits and certifies thousands of healthcare organizations and programs in the United States and operates in many countries around the world) and on the Governance Board of the Patient Safety Movement Foundation. He is a member of the NASEM (National Academies of Sciences, Engineering and Medicine) Gulf Offshore Energy Safety (GOES) Board and served for two terms (2016-2022) on the NASEM Board on Human-Systems Integration (BOHSI). He was a member of the Steering Committee of the California Council of Science and Technology (CCST) for the study of the Underground Natural Gas Storage in California (2016-2017), which issued the final report: "*Long-Term Viability of Underground Natural Gas Storage in California: An Independent Review of Scientific and Technical Information*" (January 18, 2018). In January 2023, he was appointed to the FAA Expert Panel to conduct a congressionally-mandated review of Boeing's safety management processes and Boeing's safety culture as a part of the Aircraft Certification, Safety & Accountability Act (ACSAA), Section 103 Organization Designation Authorization (ODA). He has served as a member of the Global Advisory Council of the Civilian Research and Development Foundation (CRDF) Global, chaired by Ambassador Thomas R. Pickering (2013-2016).

The National Academy of Sciences (NAS), National Academy of Engineering (NAE), and National Research Council (NRC) has selected him for his interdisciplinary expertise concerning human performance and safety culture and served as a member and technical advisor on two national panels in the United States investigating two major recent

accidents: The NAS/NRC Committee “Lessons Learned from the Fukushima Nuclear Accident for Improving Safety and Security of U.S. Nuclear Plants” (2012-2014); and the NAE/NRC “Committee on the Analysis of Causes of the Deepwater Horizon Explosion, Fire, and Oil Spill to Identify Measures to Prevent Similar Accidents in the Future” (2010-2011).

Dr. Meshkati has inspected many petrochemical and nuclear power plants around the world, including Chernobyl (1997), Fukushima Daiichi, and Daini (2012). He has worked with the U.S. Chemical Safety and Hazard Investigation Board, as an expert on human factors and safety culture, on the investigation of the BP Refinery explosion in Texas City (2005) and served as a member of the National Research Council (NRC) Committee on Human Performance, Organizational Systems and Maritime Safety. He also served as a member of the NRC Marine Board’s Subcommittee on Coordinated R&D Strategies for Human Performance to Improve Marine Operations and Safety.

Dr. Meshkati is an elected Fellow of the Human Factors and Ergonomics Society (HFES); the 2015 recipient of the HFES highest award, the *Arnold M. Small President’s Distinguished Service Award*, for his “career-long contributions that have brought honor to the profession and the Society”; and the 2007 recipient of the HFES *Oliver Keith Hansen Outreach Award* for his “scholarly efforts on human factors of complex, large-scale technological systems.” He is the inaugural recipient of the *Ernest Amory Codman Lectureship and Award* (from The Joint Commission for his leadership and efforts in continuously improving the safety and quality of care). He is an AT&T Faculty Fellow in Industrial Ecology, a NASA Faculty Fellow (Jet Propulsion Laboratory, 2003 and 2004), and a recipient of the *Presidential Young Investigator Award* from the National Science Foundation (NSF) in 1989.

Dr. Meshkati simultaneously received a B.S. in Industrial Engineering and a B.A. in Political Science in 1976, from Sharif (Arya-Meher) University of Technology in Iran and Shahid Beheshti University (National University of Iran), respectively; a M.S. in Engineering Management in 1978; and a Ph.D. in Industrial and Systems Engineering in 1983 from USC. He is a Certified Professional Ergonomist (CPE # 650).

Prof Meshkati’s National and International Nuclear Safety-Related Technical Efforts

The evidence presented in the following paragraphs indubitably attest to the fact that, as a practitioner, researcher, and a fervent advocate, Dr. Meshkati has passionately devoted a great majority of his professional career for the past twenty-five years to striving for improvement of the safety of nuclear facilities [Nuclear Power Plants (NPPs) and processing facilities] around the world.

Dr. Meshkati has visited and conducted research on 16 nuclear power reactors in the world. In addition, he has investigated and written about major industrial accidents and disasters such as Three Mile Island nuclear plant in the United States, Bhopal chemical plant in India, and Chernobyl nuclear plant in Ukraine, which he visited and inspected in 1997; and Fukushima Daiichi and Daini. He has attended and given talks based on his

research at several International Atomic Energy Agency's (IAEA) conferences on nuclear safety in the last twenty years. The last one was in 2016 for the 30th anniversary of the Chernobyl accident. He also wrote extensively and gave testimonies in the US on the importance of IAEA for global nuclear safety in 1993.

The following, is a summary of Dr. Meshkati's nuclear safety efforts in the last 38 years which are relevant to the mission and thrust of the DCISC:

- He has served as a [Member](#) of the U.S. National Academy of Sciences/National Research Council "Committee on Lessons Learned from the Fukushima Nuclear Accident for Improving Safety and Security of U.S. Nuclear Plants", visited Daiichi and Danini NPS in Nov 2011, and worked on the Committee's seminal published report, [Lessons Learned from the Fukushima Nuclear Accident for Improving Safety of U.S. Nuclear Plants](#) (2014).
- He is a member of the [Board on Human-Systems Integration \(BOHSI\)](#), The U.S. National Academies (Sciences, Engineering, and Medicine).
- He was a Research Fellow (and now an "Associate") with the [Project on Managing the Atom](#), Belfer Center for Science and International Affairs at Harvard Kennedy School, Harvard University (2018-2019).
- Have developed and taught two relevant graduate courses at the University of Southern California (USC): CEE 571, "Nuclear Safety and Security: Human Performance and Safety Culture"; and CEE 599, "Complex Systems Safety and Resiliency: Safety Culture, Systems Design & Integration."
- His "Chernobyl Page" with students - Research and information of the causes of the accidents - has been cited and linked by the IAEA's [Information Sites Related to Chernobyl - IAEA-NDS](#)
- Authored many scholarly and commentary articles on the Three Mile Island, Chernobyl, Fukushima (Daiichi and Daini), and Onagawa (The following is a partial list of the recent ones):

[Nuclear Lessons: The Chernobyl and Fukushima nuclear accidents were failures of culture as well as technology](#), *MIT Technology Review* (June 21, 2011).

[We Must Cooperate on Nuclear Safety](#), *The New York Times* (September 22, 2011).

[Fukushima's Unsung Heroes and Implications of the New Seminal Report by the U.S. National Academy of Sciences for the Future of \(Japan's\) Nuclear Power Industry](#), *Huffington Post* (November 12, 2014).

[The unsung heroes of Fukushima](#), *The Japan Times* (August 25, 2014).

[Onagawa: The Japanese nuclear power plant that didn't meltdown on 3/11](#), *Bulletin of the Atomic Scientists*, (co-authored with former industrial engineering remarkable student, Ms. Airi Rue, March 10, 2014).

[Culture of safety can make or break nuclear power plants](#), *The Japan Times*, (co-authored with former industrial engineering remarkable student, Ms. Airi Rue, March 14, 2014).

[Fukushima Nuclear Accident: Lessons Learned For U.S. Nuclear Power Plants](#), Editorial in the USC Viterbi Magazine, Spring 2015. [This article includes the following photo of me in the Tyvek suit, facemask, and respirator holding a railing in a control room of Fukushima Daiichi plant]

[Operators' Improvisation in Complex Technological Systems: Successfully Tackling Ambiguity, Enhancing Resiliency and the Last Resort to Averting Disaster](#), Journal of Contingencies and Crisis Management, Vol. 23, Issue 2, pp. 90-96, 2015.

[How to Deal with Increasingly Complex Safety-Critical Technologies: Public Policy Recommendations from the Control Room of the Three Mile Island Nuclear Reactor to the Cockpit of the Boeing 737 Max](#), Belfer Center for Science and International Affairs, Harvard University (co-authored with Dr. Sébastien Philippe, March 28, 2019).

[Thirty-three Years Since the Catastrophe at Chernobyl: A Universal Lesson for the Global Nuclear Power Industry](#), Belfer Center for Science and International Affairs, Harvard University (co-authored with Prof Serhii Plokhly of Harvard, April 25, 2019).

["From TMI and Chernobyl to Fukushima: Safety and Security Culture as Tools of Engineering Diplomacy"](#), invited presentation, hosted by the Permanent Mission of Ukraine to the United Nations on the 33rd anniversary of the Chornobyl, United Nations Headquarters, New York City, Friday, April 26, 2019.

Moreover, Dr. Meshkati's career in NPP operational safety includes teaching, conducting research, consulting and practicing, and actively participating in public policy-related matters such as writing prominently visible Op-Ed articles in several national and international newspapers and magazines such the *New York Times*, *International New York Times* (*International Herald Tribune*), *Los Angeles Times*, *Washington Post*, *Wall Street Journal*, *Financial Times*, *The Economist*, *The Hill*, *Baltimore Sun*, *Charleston Gazette*, *Houston Chronicle*, *Sacramento Bee*, *MIT Technology Review*, *Japan Times*, *Korea Herald* (South Korea), *Strait Times* (Singapore), *Times of India*, *Hurriyet Daily News* (Turkey), *Gulf Today* (UAE), *The Nation* (UAE), *Gulf News* (Qatar), *Iran News* (Iran), *Shargh* (Iran), *South China Morning Post* (Hong Kong), *Winnipeg Free Press*, *Waterloo Region Record*, *Windsor Star* (Canada), *Scientific Malaysian*, etc.

In 2022; Dr. Meshkati published three commentary articles in *The Conversation* in [March](#), [August](#), and [September](#) on the nuclear safety risks and the dire situation of the Zaporizhzhia Nuclear Power Plant (ZNPP) in Ukraine after the Russian invasion. These articles, according to *The Conversation's* dashboard data, have had so far more than 79,000 reads around the world and have been translated into French, Spanish, Polish, Norwegian, Chinese, Latvian, Catalan, etc., and been cross-linked and re-published in major new sites in several countries, such as [Britannica](#); and referred to in

the *New York Times*, Aljazeera, Deutsche Welle, Australian Broadcasting Corp, and other news outlets around the world, such as [Telam](#) in Argentina.

In an invited testimony before the U.S. Commission on Improving the Effectiveness of the U.N., which was originally appointed by President George Bush in 1993, Dr. Meshkati argued for the expansion of the domain and the broadening of the International Atomic Energy Agency's (IAEA) activities. His testimony was entitled "The Critical Role of the United Nations in Ensuring the Safety of Nuclear Power Plants Around the World," and thereafter, he assiduously pushed for the creation of the Department of Nuclear Safety at the IAEA and relentlessly lobbied for it in the United States and at international meetings. Learning that the IAEA had finally created the new Department of Nuclear Safety in 1996, was like a music to his ears.

In addition to the NSF PYI grant, Dr. Meshkati has been awarded two research grants from the U.S. Nuclear Regulatory Commission (U.S. NRC) for his research on the critical role of human and organizational factors in the safety of NPPs. In the first study, which examined the integration of control room interface with operators' tasks and their team structures, Dr. Meshkati designed, developed, and implemented a special interactive real-time version of the computer simulator of the Experimental Breeder Reactor (EBR-II) in Idaho Falls. Another salient function of this simulator was to simulate seven malfunction scenarios which are the combinations of transients like primary pump coasts down, secondary pump coasts down, secondary pump increases, control rods run out, and failed indicators. An experiment was conducted in the early November 1993, at the EBR-II plant where some thirty operators of the actual plant were asked to operate the simulator using two types of interfaces.

His second NRC research grant, which is the continuation of the first one and is in-progress, deals with the validations of findings in light of more complex plant malfunctions. Dr. Meshkati reported his research through journal articles, technical reports and presentations to the U.S. NRC and other organizations.

He is also a member of the Review Panel for the National Research Council (NRC), which is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering. He has been invited by the NRC and its Board of Radioactive Waste Management to comment on and review a report for the Department of Energy [*Systems Analysis and Systems Engineering in Environmental Remediation Programs at the Department of Energy's Hanford Site* (Version 1/13/98, Draft--1/13/98).

Prof Meshkati's Nuclear Safety-related Memberships, Testimonies and Presentations

- Invited testimony, entitled "Leadership and Safety Culture: Personal Reflections on Lessons Learned", before the US Defense Nuclear Facilities Safety Board (DNFSB) Public Hearing and Meeting on Safety Culture, Washington, DC, August 27, 2014.
- Member of the Planning Committee of the Center for Space Nuclear Research (CSNR), which is operated by the Universities Space Research Association

(USRA) in collaboration with the Idaho National Laboratory (INL), Idaho Falls, Idaho, founded in 2005.

- Member of the research proposal Review Panel for the Nuclear Energy Research Initiative University Program (NERI), selected by the US Department of Energy, Office of Nuclear Energy (2003-2005).
- Member of the Evaluation Committee for the “R&D Enterprises” and the Laboratory Directed Research and Development Program at the Idaho National Engineering and Environmental Laboratory (INEEL) (August 1999).
- Invited testimony before the U.S. Commission on Improving the Effectiveness of the United Nations, Los Angeles, California, “The Critical Role of the United Nations in Ensuring the Safety of Nuclear Power Plants Around the World” (February 1, 1993).